



- 32 -

one of  $R_1'$  and  $R_2'$  independently of one another represents hydrogen or  $C_1$ - $C_4$ alkyl and the other one represents  $C_3$ - $C_4$ alkyl;

x represents zero (direct bond) or a numeral from one to three;

y represents a numeral from two to ten; and

z represents a numeral from two to six,

*characterised in that* a homogeneous aqueous dispersion is prepared, which comprises the compound (I) or a mixture thereof, wherein  $R_1$ ,  $R_2$ ,  $R_1'$ ,  $R_2'$ , Y, x, y and z are as defined above, crystals are formed by the addition of a fatty acid partial ester of polyoxyethylene sorbitan and seed crystals and the crystals obtained are separated from the dispersion.

2. A process step of further processing the solid particles comprising in essentially crystalline form the compound (I), *characterised in that* a homogeneous aqueous dispersion is prepared, which comprises the compound (I) or a mixture thereof, wherein  $R_1$ ,  $R_2$ ,  $R_1'$ ,  $R_2'$ , Y, x, y and z are as defined in claim 1, crystals are formed by the addition of a fatty acid partial ester of polyoxyethylene sorbitan and seed crystals and the crystals obtained are separated from the dispersion and further processed to other solid particle forms.
3. A process according to claim 1, *characterised in that* crystals are formed by the addition of a fatty acid partial ester of polyoxyethylene sorbitan selected from the group consisting of polyoxyethylene sorbitan polyoxyethylene(20 or 4)-sorbitan monolaurate, polyoxyethylene-(20)-sorbitan monopalmitate or monostearate, polyoxyethylene-(4 or 20)-sorbitan monostearate or tristearate, polyoxyethylene-(20 or 5)-sorbitan monooleate and polyoxyethylene-(20)-sorbitan trioleate.
4. A process according to claim 3, *characterised in that* the crystals are formed by the addition of polyoxyethylene-(20 or 5)-sorbitan monooleate.
5. A process according to claim 1 for preparing solid particles *comprising* in essentially crystalline form a compound (I) or a mixture thereof, wherein

one of  $R_1$  and  $R_2$  independently of one another represents hydrogen or tert-butyl and the other one represents tert-butyl;

x represents two; and

- 33 -

Y represents C<sub>8</sub>-C<sub>22</sub>alkoxy; or groups of the partial formulae (A), (B) or (C),

wherein

one of R<sub>1</sub>' and R<sub>2</sub>' independently of one another represents hydrogen or tert-butyl and the other one represents tert-butyl;

x represents two; y represents six; and z represents three,

*characterised in that* the crystals are formed by the addition of polyoxyethylene-(20 or 5)-sorbitan monooleate.

6. A process according to claim 2, *characterised in that* the crystals obtained are separated from the dispersion and converted to granulates.
7. Compressed articles *comprising* a compound (I) or a mixture thereof in essentially crystalline form obtainable by the process according to claim 2.
8. An aqueous dispersion *comprising*
  - a) In essentially crystalline form a compound (I) or a mixture thereof, wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>1</sub>', R<sub>2</sub>', Y, x, y and z are as defined in claim 1;
  - b) A fatty acid partial ester of polyoxyethylene sorbitan; and
  - c) Water.
9. An aqueous dispersion according to claim 1 *comprising* as component a) in essentially crystalline form pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate].
10. An aqueous dispersion according to claim 1 *comprising* as component a) in essentially crystalline form N,N'-hexane-1,6-diyl-bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionamide)].
11. A crystal form of pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate] *characterised* in the X-ray powder diffraction pattern by the interplanar spacings [d-values] and relative line intensities of the following principal lines:

d-spacing [Å]	Relative intensity
22.7	strong
19.7	strong

- 34 -

14.9	medium
13.1	medium
11.3	medium
9.0	weak
8.6	medium
7.6	weak
7.1	very strong
6.6	weak
5.94	weak
5.63	medium
5.45	weak
5.26	medium
5.06	medium
4.82	medium
4.74	strong
4.58	medium
4.43	very strong
4.30	weak
4.09	weak
3.93	weak
3.75	weak

12. A crystal modification ( $\mu$ -form) of pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate] according to claim 10, *characterised* in the X-ray powder diffraction pattern by the interplanar spacings [d-values] and relative line intensities:

d-spacing [Å]	Relative intensity
22.7	strong
19.7	strong
14.9	medium
13.1	medium
12.4	very weak
11.3	medium
10.9	very weak
9.9	very weak
9.0	weak
8.6	medium
7.6	weak
7.1	very strong
6.6	weak
6.3	very weak
5.94	weak

- 35 -

5.81	very weak
5.63	medium
5.45	weak
5.35	very weak
5.26	medium
5.06	medium
4.93	weak
4.82	medium
4.74	strong
4.58	medium
4.52	weak
4.43	very strong
4.30	weak
4.13	very weak
4.09	weak
3.93	weak
3.75	weak
3.59	very weak
3.42	very weak
3.33	very weak
3.25	very weak
3.16	very weak
3.06	very weak

13. An aqueous dispersion *comprising* the crystal modification (  $\mu$ -form) of pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate] as defined in claim 12.
14. A crystal form of N,N'-hexane-1,6-diyl-bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl-propionamide)] *characterised* in the X-ray powder diffraction pattern by the interplanar spacings [d-values] and relative line intensities of the principal lines:

d-spacing [Å]	Relative intensity
7.3	medium
5.13	strong
4.88	medium
3.92	weak

15. A crystal form of N,N'-hexane-1,6-diyl-bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl-propionamide)] according to claim 13, *characterised* in the X-ray powder diffraction pattern by the interplanar spacings [d-values] and relative line intensities including the principal lines and weaker lines:

d-spacing [Å]	Relative intensity
---------------	--------------------

- 36 -

11.1	weak
10.3	medium
7.9	medium
7.3	medium
5.13	strong
5.06	strong
4.88	medium
3.92	weak

16. A crystal modification ( $\beta$ -form) of N,N'-hexane-1,6-diyl-bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionamide] *characterised* in the X-ray powder diffraction pattern by the following interplanar spacings [d-values] and relative line intensities including the principal lines and weaker lines:

d-spacing [Å]	Relative intensity
16.0	very weak
13.6	very weak
12.7	very weak
11.1	weak
10.5	medium
10.3	medium
9.1	very weak
8.5	weak
8.0	medium
7.9	medium
7.5	medium
7.3	medium
7.1	medium
6.8	weak
6.4	weak
6.2	medium
6.1	medium
5.94	weak
5.83	very weak
5.58	medium
5.24	medium
5.13	strong
5.06	strong
4.98	medium
4.88	medium
4.71	medium
4.59	strong
4.54	strong
4.38	strong
4.24	medium

- 37 -

4.13	medium
3.92	weak
3.85	weak
3.71	very weak
3.53	weak
3.38	very weak
3.29	very weak
3.05	very weak

17. An aqueous dispersion *comprising* the crystal modification ( $\beta$  -form) of N,N'-hexane-1,6-diyl-bis[3-(3,5-di-tert-butyl-4-hydroxyphenylpropionamide)] as defined in claim 16.